

Claims

1. A cellular mobile station (20) comprising a first radio communication means (30) interfacing a cellular network (10), operating on at least one cellular frequency band, for transmitting and receiving calls through said network (10), **characterized** by comprising:

5 a second radio communication means (40) operating on a different frequency band, separated from cellular frequency bands, for transmitting and receiving calls outside a cellular network through direct communication between cellular mobile stations (MS 1, MS 2);

10 a switching means between said first (30) and said second radio communication means (40) for transferring calls between cellular frequency bands and said different frequency band upon a predetermined command;

means in said second radio communication means (40) determining a carrier wave within said different frequency band for transmitting and receiving a transferred modulated call; and

15 a synchronizing means for establishing a connection for calls over said carrier wave with another predetermined mobile station, thus extending the call capacity.

2. A mobile station according to claim 1, **characterized** in that the mobile network (10) is monitoring and controlling the switching means for direct communication between mobile stations (MS 1, MS2) by said synchronizing means reading commands on the 20 mobile network control channels.

3. A mobile station according to claim 2, **characterized** in that the mobile station (20) is utilized as a router that receives information and re-transmits the same information based on an address tag attached to packets of information.

4. A mobile station according to claim 2, **characterized** in that an ongoing 25 speech call is directed to the network or the direct communication through the switch determined through measurement of signal strength parameters.

5. A mobile station according to claims 2 or 3, **characterized** in that determining a direct communication is based on cell information in a visitor location register of the network.

30 6. A method in a cellular telephony system comprising at least two mobile stations communicating (MS 1, MS 2), said mobile stations comprising a first radio communication means (30) interfacing a cellular network (10), operating on at least one cellular frequency band, for transmitting and receiving calls through said network, **characterized** by comprising the steps of:

said mobile stations (MS 1, MS 2), each through a second radio communication means (40), operating on a different frequency band, separated from cellular frequency bands;

5 said second radio communication means (40) transmitting and receiving calls outside a cellular network through direct communication between at least two of said cellular mobile stations;

 in said mobile stations switching between said first and said second radio communication means for transferring calls between cellular frequency bands and said different frequency band upon a predetermined command;

10 in said second radio communication means (40) determining a mutual carrier wave within said different frequency band for transmitting and receiving a modulated call between said at least two mobile stations (MS 1, MS 2); and

 synchronizing for establishing a connection for calls between at least said two mobile stations, thus extending the call capacity.

15 7. A method according to claim 6, **characterized** in that the mobile network (10) is monitoring and controlling the switching means for direct communication between mobile stations by said synchronizing means reading commands on the mobile network control channels.

20 8. A method according to claim 7, **characterized** in that the mobile station is utilized as a router that receives information and re-transmits the same information based on an address tag attached to packets of information.

 9. A method according to claim 7, **characterized** in that an ongoing speech call is directed to the network or the direct communication through the switch determined through measurement of signal strength parameters.

25 10. A method according to claims 7 or 8, **characterized** in that determining a direct communication is based on cell information in a visitor location register of the network.
